

Fig. 1A

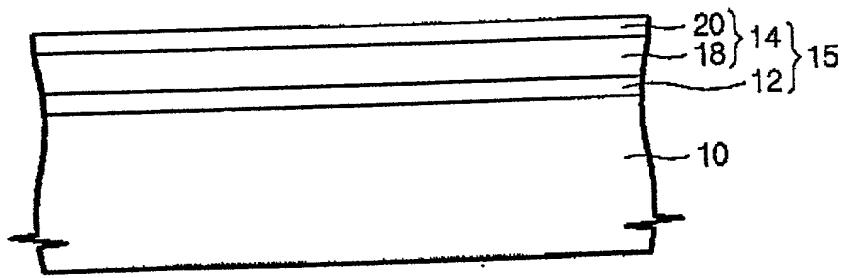


Fig. 1B

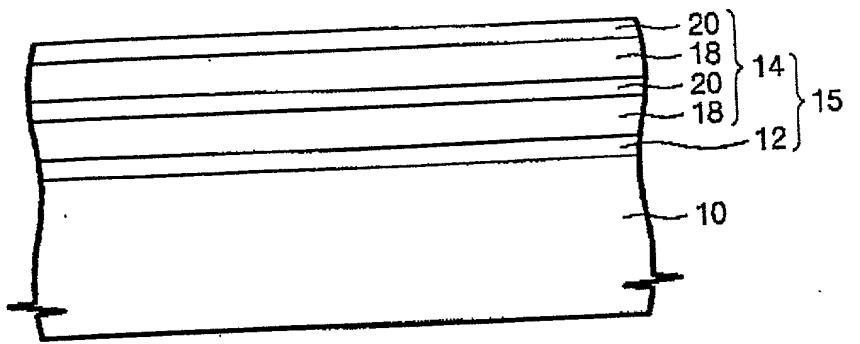


Fig. 1C

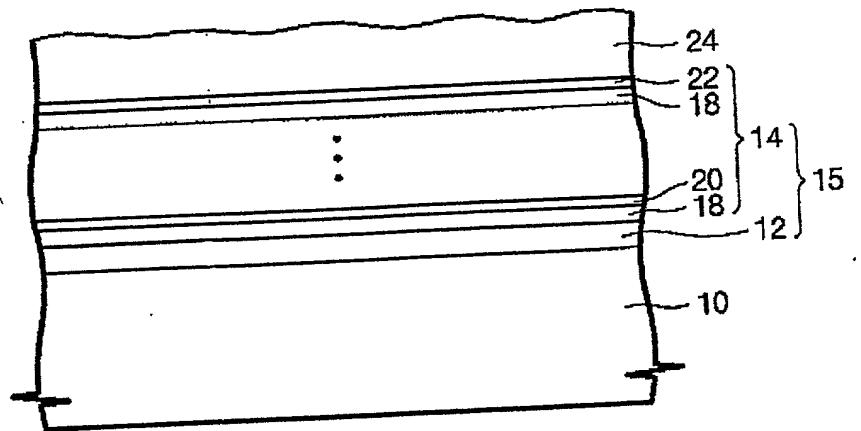
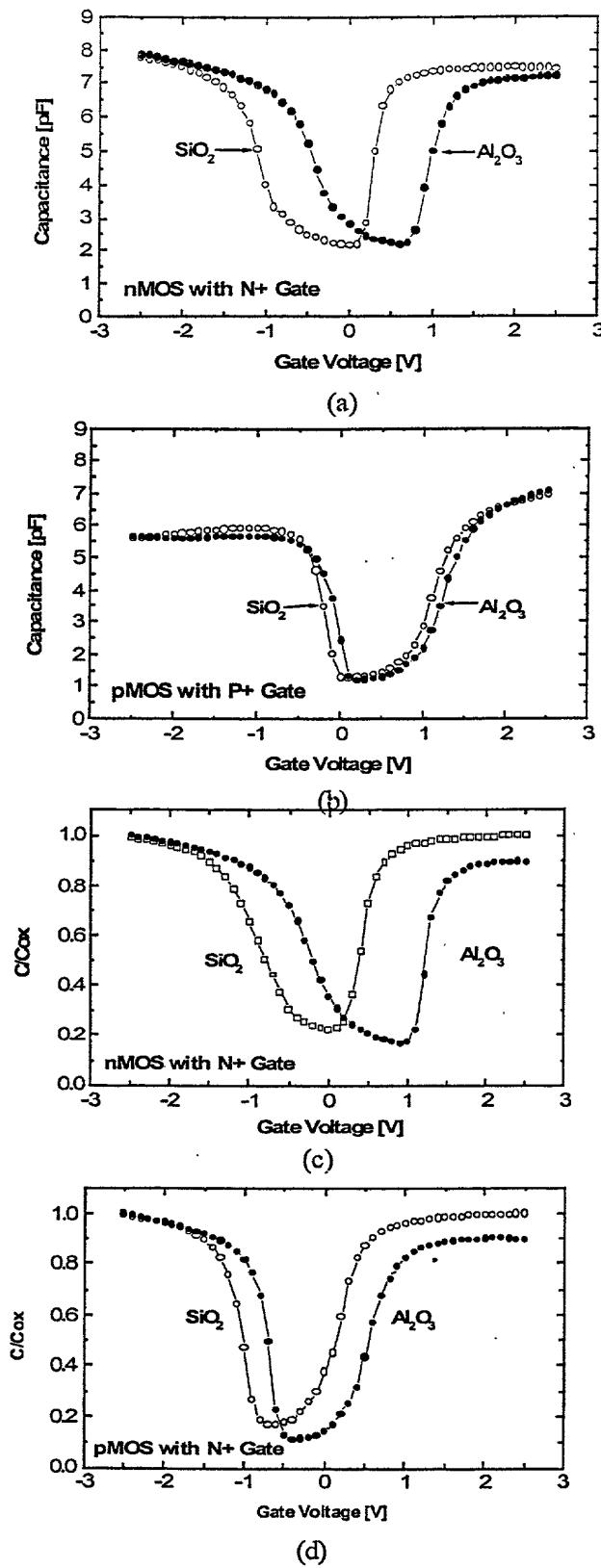


Fig. 2

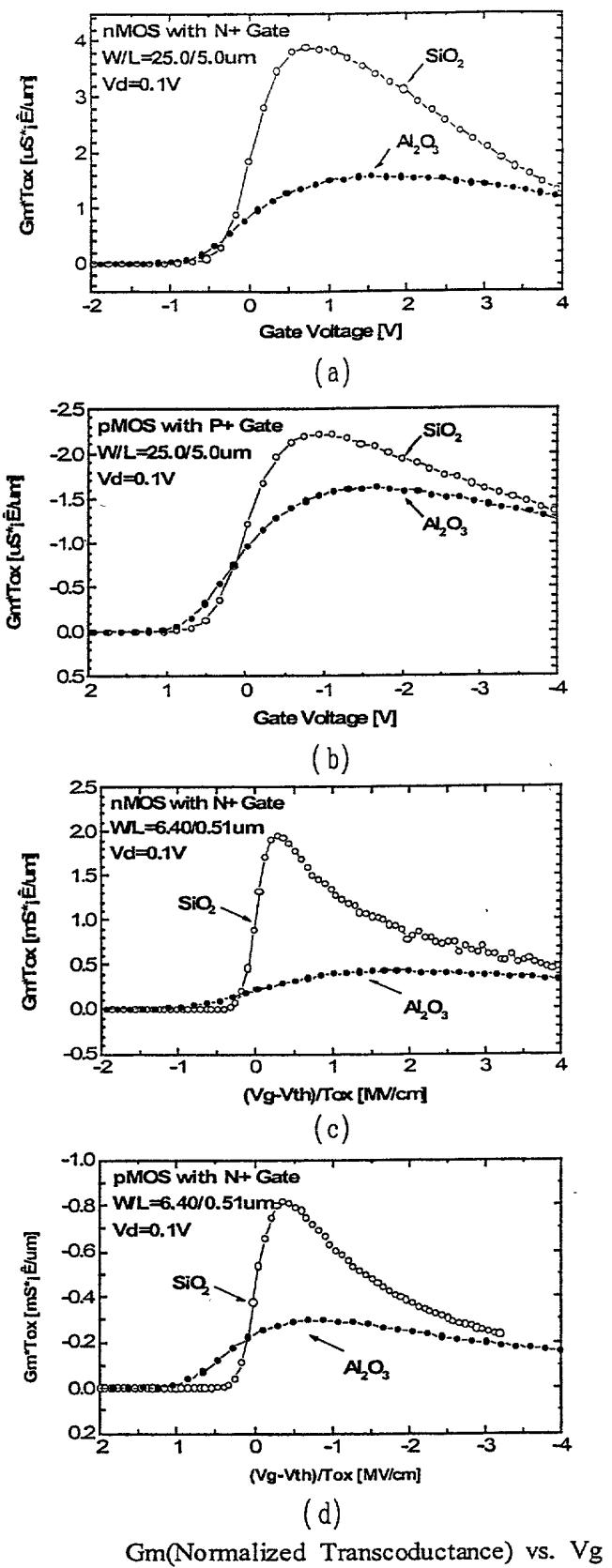
FIG. 3



Al<sub>2</sub>O<sub>3</sub> MOS Capacitor C-V Curves

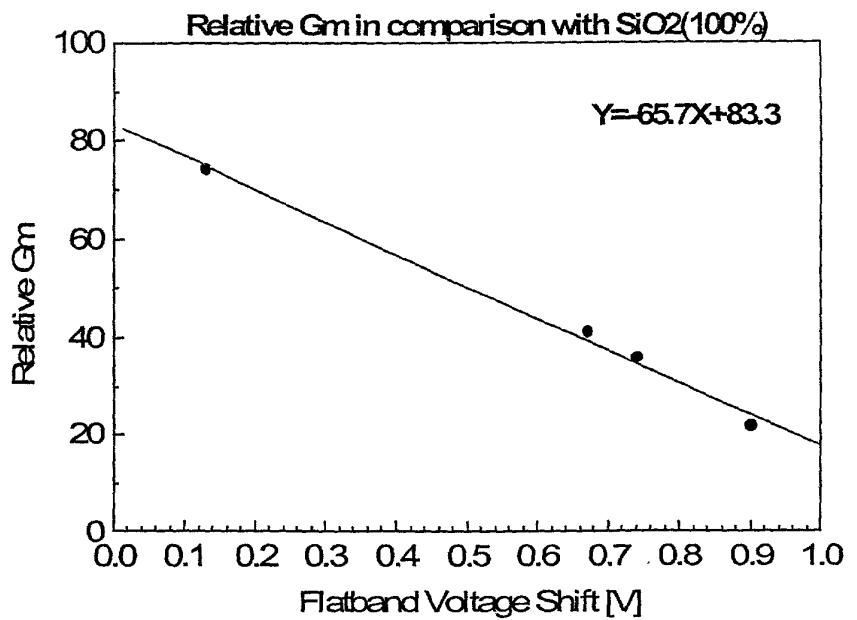
(a) n+Poly-Si/ Al<sub>2</sub>O<sub>3</sub> or SiO<sub>2</sub>/ p-Si   (b) p+Poly-Si/ Al<sub>2</sub>O<sub>3</sub> or SiO<sub>2</sub>/ n-Si   (c) n+Poly-Si/ Al<sub>2</sub>O<sub>3</sub> or SiO<sub>2</sub>/ p-Si   (d) n+Poly-Si/ Al<sub>2</sub>O<sub>3</sub> or SiO<sub>2</sub>/ n-Si

FIG. 4



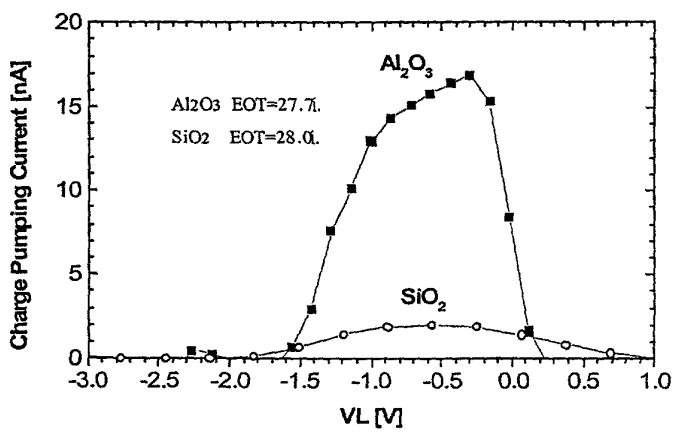
Gm(Normalized Transconductance) vs. Vg

- (a) N+Gate nMOS (b) P+Gate pMOS
- (c) In-situ Doped N+Gate nMOS
- (d) In-situ Doped N+Gate pMOS



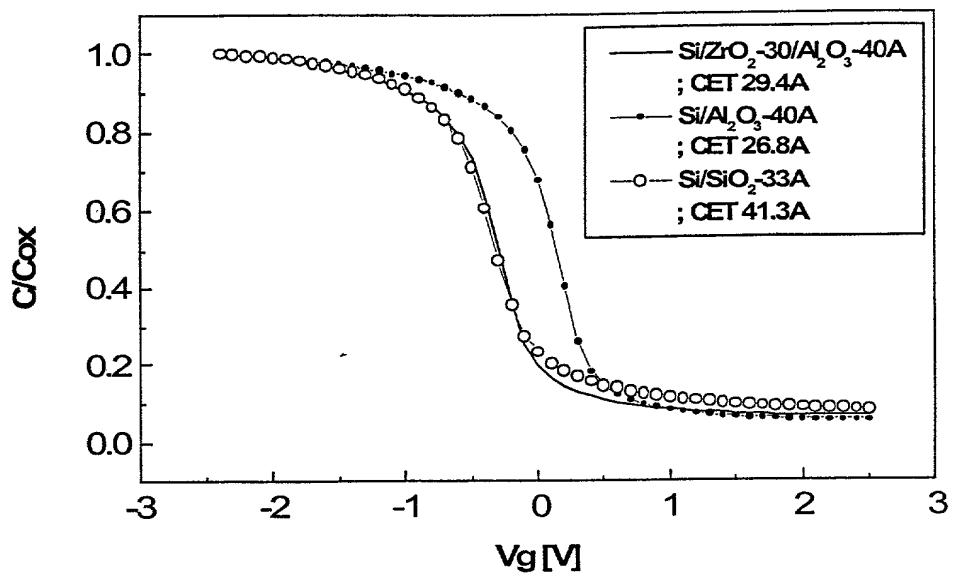
Flatband Voltage Shift vs. Relative Gm of Al<sub>2</sub>O<sub>3</sub> to SiO<sub>2</sub>

FIG. 5



Gate Base Level VL vs. Charge Pumping Current Icp

FIG. 6



C-V Curve of  $\text{ZrO}_2/\text{Al}_2\text{O}_3$  Stack layer

FIG. 7